

In the claims:

In claim 7, line 6, after "resin", insert -blend-.

In claim 8, line 6, after "resin", insert -blend-.

REMARKS AND REQUEST FOR RECONSIDERATION

The Final Rejection of December 22, 1997 has been fully reconsidered by the Applicant. As a result, the present application has been slightly amended in order to more particularly distinguish the present invention from the prior art. In view of the above amendments and following comments, entry of the above amendments and reconsideration of the application is respectfully requested.

The Office Action

The Examiner rejected claims 1-8 as being obvious and unpatentable over Nesbitt (the '193 patent of Spalding (Lisco, Inc.), the present assignee's) in view of Nakamura (U.S. Patent No. 5,068,151) for reasons set forth in the previous Office Action. Specifically, the Examiner stated the following in the previous Office Action of January 30, 1996 (paper No. 2):

Claims 1-8 are rejected under 35 U.S.C. §103 as being unpatentable over Nesbitt in view of Nakamura. Nesbitt discloses the claimed invention with the exception of the particulars of the materials utilized. However, one of ordinary skill in the art would, in view of Nesbitt's disclosure, recognize that other materials known in the art could have been utilized in the invention so long as the cover comprised a harder inner layer of Shore D hardness of 60 with a softer outer layer. As disclosed by Nakamura the use of hard materials such as that claimed for the inner cover layer is known in the art. It would have been obvious to one of ordinary skill in the art to have utilized such known materials in the manufacture of Nesbitt's ball absent a showing of unexpected results.

Regarding claims 2 and 3, it would have been obvious to one of ordinary skill in the art to have increased the thicknesses of

Nesbitt's layers to increase the durability of the ball.

Alternatively, in the Final Rejection of October, 1996 the Examiner further rejected the arguments presented in response to the January 30, 1996 rejection by reasoning that the combination of a hard interior layer combined with a soft cover is not a novel concept and that the materials being used were known.

However, Applicants are of the opinion that the prior art completely fails to disclose the use of a blend of two or more low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid as the inner cover layer as required by claim 1 and newly amended claims 7 and 8. The blend of low acid ionomers in the inner cover provide unexpectedly enhanced playability in golf balls compared to those utilizing a single ionomer (i.e. those of Nesbitt '193).

The Present Invention

The invention of this application is directed to refined multi-layer golf ball cover compositions and the resulting multi-layer golf balls produced thereby. The novel multi-layer golf balls of the invention include a first or inner layer or ply of an improved low acid (16 weight percent acid or less) ionomer blend. A second or outer layer or ply is included in the multi-layered golf balls comprised of a comparatively softer, low modulus ionomer, ionomer blend or other non-ionomeric thermoplastic elastomer such as polyurethane, a polyester elastomer or a polyesteramide.

It has been found that the use of a number of relatively recently developed low acid ionomer resins to produce an inner cover layer, provides for a substantial increase in resilience (i.e., enhanced distance), over a number of known two-piece golf balls. In addition, it has been determined that use of a **blend** of low acid ionomer resins to produce the inner cover layer in combination with a soft outer cover produces enhanced spin and compression characteristics.

Consequently, the overall combination of the inner and outer cover layers results in a golf ball having enhanced

resilience (i.e., farther travel distance) and durability (i.e., better cut resistance, etc.) characteristics while maintaining and in many instances, improving the balls playability properties.

Although Spalding (assignee of the instant application) and others had previously attempted to produce golf balls having multi-layered covers containing one or more ionomer resins exhibiting the overall distance, playability and durability characteristics desired, such attempts have been somewhat unsuccessful in comparison with the present invention. For example, Spalding in U.S. Patent No. 4,431,193 (Nesbitt) disclosed a multi-layer golf ball which is produced by initially molding a first cover layer on a spherical core and the adding a second layer. The first layer is comprised of a hard, high flexural modulus resinous material such as type 1605 Surlyn® (now designated Surlyn® 8940). Type 1605 Surlyn® (Surlyn® 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi. An outer layer of a comparatively soft, low flexural modulus resinous material such as type 1855 Surlyn® (now designated Surlyn® 9020) is molded over the inner cover layer. Type 1855 Surlyn® (Surlyn® 9020) is a zinc ion based low acid (10 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 14,000 psi.

The Spalding (Nesbitt) '193 patent teaches that the hard, high flexural modulus resin which comprises the first layer provides for a gain in coefficient of restitution over the coefficient of restitution of the core. The relatively soft, low flexural modulus outer layer provides for the advantageous "feel" and playing characteristics of a balata covered golf ball.

Unfortunately, however, while the balls shown in the examples of the Nesbitt '193 patent do exhibit some enhanced playability characteristics with slightly improved distance (i.e. enhanced C.O.R. values) over a number of other known multi-layered balls, the balls suffer from poor cut resistance and relatively short distance (i.e. low C.O.R. values) when compared to two-piece, unitary cover layer balls. These undesirable properties

make the ball produced in accordance with the specific examples of the Nesbitt '193 patent unacceptable by today's standards.

The Claims Distinguish Patentability Over the Cited Art

The claims of the present invention all require the use of a **blend** of low acid ionomeric resins in the hard inner cover layer of the golf ball in combination with a relatively softer outer cover to provide a golf ball having enhanced playability characteristics including enhanced distance, spin and compression characteristics.

It is submitted that neither Nesbitt ('193) nor Nakamura ('151) teach or provide any motivation to a person of ordinary skill in the art to utilize a blend of low acid ionomeric resins in the inner cover layer of a golf ball. Moreover, not only does the prior art fail to recognize the use of the **blend** of low acid ionomers, it completely fails to recognize the unexpected enhanced properties of a golf ball produced using the blend of low acid ionomeric resins as an inner cover layer in combination with a relatively softer outer cover layer.

As can be seen from the data presented in the specification, Examples 19 and 20 in the specification (page 41), which are within the scope of the present claims, show C.O.R. values of .800 and .810 respectively. Example 7 of the specification (page 36) which represents a ball within the scope of Nesbitt ('193), shows a C.O.R. of .757. Applicants submit increasing the C.O.R. results in a golf ball having improved distance over the golf balls of the '193 patent. This increase in C.O.R. (and consequently, increase in distance when hit) is clearly not taught nor suggested by Nesbitt or Nakamura in combination with Nesbitt.

Nakamura (U.S. patent No. 5,068,151) merely relates to a two-piece golf ball having a unitary cover comprised of a lithium neutralized ionomer resin having a Shore D hardness of at least 60. Nakamura is not directed to multi-layer golf ball technology and fails to address the particular characteristics of such a ball.

Lastly, kindly also note that an increase in cover thickness does not necessarily result in an increase in

durability. Moreover, increasing the cover thickness of a multi-layered golf ball also effects such properties as weight, spin, C.O.R. (distance), compression, etc. As noted in the application, properties such as weight, size, etc. are strictly limited by the U.S.G.A. Thus, one can not merely increase the cover thickness to obtain enhanced durability of a regulation golf ball.

Accordingly, the Applicant respectfully submits that the present invention is not merely a combination of the teaching of Spaldings' '193 patent to Nesbitt and the teaching of Nakamura. Thus, reconsideration of the rejection is respectfully requested.

CONCLUSION

In view of the above comments, it is believed that this application is in condition for allowance. Therefore, the Applicant respectfully requests entry of the amendment and favorable reconsideration and allowance of this application.

Respectfully submitted,

FAY, SHARPE, BEALL, FAGAN
MINNICH & MCKEE


Richard M. Klein
Reg. No. 33,000
1100 Superior Avenue
Suite 700
Cleveland, Ohio 44114
(216) 861-5582